

What is claimed is:

1    1.    A device comprising:  
2                 a device housing;  
3                 a virtual image display positioned within the device housing, including a  
4       microdisplay which forms a source object and an optical system which magnifies the  
5       source object to form a magnified virtual image, the optical system including a  
6       viewing optic adjacent a side of the device housing through which a user can view the  
7       magnified virtual image;  
8                 a finger controllable mechanism by which the user can control an operation of  
9       the virtual image display;  
10                a processor which receives electronic signals from the finger controllable  
11      mechanism corresponding to the user's operation of the finger controllable  
12      mechanism; and  
13                logic performable by the processor, the logic comprising  
14                 logic for causing a source object to be displayed by the microdisplay,  
15                 logic for modifying the displayed source object in response to the  
16       electronic signals from the finger controllable mechanism,  
17                 logic for causing the microdisplay to display a keyboard having a  
18       plurality of user selectable keys, and  
19                 logic for displaying a cursor and allowing a user to employ the finger  
20       controllable mechanism to control movement of the displayed cursor, wherein when  
21       the cursor is positioned within a lateral footprint of the displayed keyboard, the cursor  
22       logic limits the positioning of the cursor to being position at one of the user selectable  
23       keys displayed on the displayed keyboard.

1    2.    A device according to claim 1, wherein when the cursor is positioned within a  
2       lateral footprint of the displayed keyboard and the cursor logic recognizes the cursor  
3       as being positioned at a first user selectable key, when a signal from the finger  
4       controllable mechanism causes the cursor logic to move the cursor from the first user  
5       selectable key, the cursor logic limits the initial movement of the cursor to one of the  
6       group of user selectable keys which borders the first user selectable key.

1   3.     A device according to claim 1, wherein a position of the cursor within the  
2   lateral footprint of the displayed keyboard is displayed by having a key of the  
3   keyboard at which the cursor logic positions the cursor change in appearance as  
4   compared to when the cursor is not positioned at that key.

1   4.     A device according to claim 3, wherein the change in appearance of the key is  
2   a change in the appearance of a border of the key.

1   5.     A device according to claim 1, wherein the cursor logic recognizes a  
2   discontinuation of the user operating the finger controllable mechanism as an act of  
3   selecting the key at which the cursor is positioned at the time that operation of the  
4   finger controllable mechanism is discontinued.

1   6.     A device according to claim 5, wherein the finger controllable mechanism is a  
2   touch pad and the discontinuation of the operation of the finger controllable  
3   mechanism is a lifting of a finger from the touch pad.

1   7.     A device according to claim 1, wherein the viewing optic is positioned  
2   adjacent a first side of the display body and the finger controllable mechanism is  
3   positioned adjacent a second side of the display body which is opposite the first side  
4   of the display body.

1   8.     A device according to claim 1, wherein the finger controllable mechanism is a  
2   touch pad.

1   9.     A device according to claim 1, wherein the viewing optic is positioned  
2   adjacent a first side of the display body and the touch pad is positioned adjacent a  
3   second side of the display body which is opposite the first side of the display body.

1 10. A device according to claim 1, wherein the touch pad is positioned such that a  
2 footprint of the viewing optic overlaps at least a portion of a footprint of the touch  
3 pad.

1 11. A device according to claim 1, wherein the housing has a length between  
2 about 2 and 8 inches and a width between about 1 and 4 inches.

1 12. A device according to claim 1, wherein the housing has a thickness between  
2 about 0.5 and 2 inches.

1 13. A device according to claim 1, wherein the virtual image display provides a  
2 full field of view of the virtual image when the display is positioned between about at  
3 a surface of the eye of the person and 4 inches from the eye.

1 14. A device according to claim 1, wherein the optical system of the virtual image  
2 display magnifies the source object by between about 3x and 15x.

1 15. A device according to claim 1, wherein the microdisplay forms a source object  
2 having an area between about 10mm<sup>2</sup> and 200mm<sup>2</sup>.

1 16. A device according to claim 1, wherein the viewing optic has an optical  
2 surface having an area between about 40mm<sup>2</sup> and 800mm<sup>2</sup>.

1 17. A device comprising:  
2       a device housing;  
3       a virtual image display positioned within the device housing, including a  
4 microdisplay which forms a source object and an optical system which magnifies the  
5 source object to form a magnified virtual image, the optical system including a  
6 viewing optic adjacent a side of the device housing through which a user can view the  
7 magnified virtual image;  
8       a finger controllable mechanism by which the user can control an operation of  
9 the virtual image display;

10           a processor which receives electronic signals from the finger controllable  
11       mechanism corresponding to the user's operation of the finger controllable  
12       mechanism; and  
13           logic performable by the processor, the logic comprising  
14           logic for causing a source object to be displayed by the microdisplay,  
15           logic for modifying the displayed source object in response to the  
16       electronic signals from the finger controllable mechanism,  
17           logic for causing the microdisplay to display a keyboard having a  
18       plurality of user selectable keys, wherein the displayed keyboard has a layout where a  
19       row of keys above a given key and a row of keys below the given key are horizontally  
20       offset relative to the given key such that at least two different keys from the row  
21       above are positioned above a lateral footprint of the given key and at least two  
22       different keys from the row below are positioned below the lateral footprint of the  
23       given key.

1       18.     A device according to claim 17, wherein the displayed keyboard has a  
2       QWERTY keyboard layout.

1       19.     A device according to claim 17, wherein the displayed keyboard has a TPI  
2       layout.

1       20.     A device according to claim 17, wherein when the cursor is positioned within  
2       a lateral footprint of the displayed keyboard, the cursor logic limits the positioning of  
3       the cursor to being position at one of the user selectable keys displayed on the  
4       displayed keyboard.

1       21.     A device according to claim 17, wherein when the cursor is positioned within  
2       a lateral footprint of the displayed keyboard and the cursor logic recognizes the cursor  
3       as being positioned at a first user selectable key, when a signal from the finger  
4       controllable mechanism causes the cursor logic to move the cursor from the first user  
5       selectable key, the cursor logic limits the initial movement of the cursor to one of the  
6       group of user selectable keys which borders the first user selectable key.

1 22. A device according to claim 17, wherein a position of the cursor within the  
2 lateral footprint of the displayed keyboard is displayed by having a key of the  
3 keyboard at which the cursor logic positions the cursor change in appearance as  
4 compared to when the cursor is not positioned at that key.

1 23. A device according to claim 22, wherein the change in appearance of the key  
2 is a change in the appearance of a border of the key.

1 24. A device according to claim 17, wherein the cursor logic recognizes a  
2 discontinuation of the user operating the finger controllable mechanism as an act of  
3 selecting the key at which the cursor is positioned at the time that operation of the  
4 finger controllable mechanism is discontinued.

1 25. A device according to claim 24, wherein the finger controllable mechanism is  
2 a touch pad and the discontinuation of the operation of the finger controllable  
3 mechanism is a lifting of a finger from the touch pad.

1 26. A device comprising:  
2       a device housing;  
3       a virtual image display positioned within the device housing, including a  
4 microdisplay which forms a source object and an optical system which magnifies the  
5 source object to form a magnified virtual image, the optical system including a  
6 viewing optic adjacent a side of the device housing through which a user can view the  
7 magnified virtual image;  
8       a finger controllable mechanism by which the user can control an operation of  
9 the virtual image display;  
10      a processor which receives electronic signals from the finger controllable  
11 mechanism corresponding to the user's operation of the finger controllable  
12 mechanism; and  
13      logic performable by the processor, the logic comprising  
14       logic for causing a source object to be displayed by the microdisplay,

15 logic for modifying the displayed source object in response to the  
16 electronic signals from the finger controllable mechanism,  
17 logic for causing the microdisplay to display a keyboard having a  
18 plurality of user selectable keys, wherein the displayed keyboard has a circular layout  
19 where different keys are positioned about a perimeter of the circle.

1 27. A device according to claim 26, wherein the displayed keyboard has at least  
2 two concentric rings of different keys.

1 28. A device according to claim 26, wherein the cursor logic only allows a cursor  
2 to be displayed within a lateral footprint of the displayed keyboard as a selection of  
3 one of the keys of the displayed keyboard.